



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S) : P. Simmons, et al.  
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FOR : Mesenchymal Precursor Cell  
GROUP ART UNIT : 1625  
Examiner : Belyavskiyi, Michail A.

10 Mail Stop: Amendment  
Commissioner for Patents  
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15 **Amendment of Claims in Application**

Prior to examining this application, please amend the claims as follows:

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In the Claims:

Cancel claims 1-24, 29-30, 32-33, 35-39 and 46 and amend the remaining  
claims as follows:

1-24. Cancelled.

25. (Currently amended) An enriched cell population wherein at least 1% of the cells are  
 5 ~~mesenchymal precursor cells that are colony forming~~ capable of giving rise to colony forming units-fibroblast (CFU-F).

26. (Currently amended) An enriched cell population as in claim 25 wherein the at least  
1% of cells carry at least two markers selected from [a] the group of surface markers  
 10 specific for mesenchymal precursor cells [including] consisting of LFA-3, THY-1,  
 antigen identified by STRO-1, VCAM-1, ICAM-1, PECAM-1, P-selectin, L-selectin,  
 CD49b/CD29, CD49c/CD29, CD49d/CD29, CD29, CD18, CD61, 6-19,  
 thrombomodulin, CD10, CD13, integrin beta, STRO-2, CD146, and SCF or any  
combination thereof.

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27. (Currently amended) An enriched cell population as in claim 26 wherein the at  
least 1% of cells carry the antigen identified by STRO-1 and VCAM-1.

28. (Currently amended) An enriched cell population as in claim 25 wherein at least  
 20 5% of the cells are ~~mesenchymal precursor cells that are colony forming~~ capable of giving rise to colony forming units-fibroblast (CFU-F).

Claims 29-30. Cancelled .

25 31. (Currently amended) An enriched cell population as in claim 25 wherein at least  
 10% of the cells are ~~mesenchymal precursor cells that are colony forming~~ capable of giving rise to colony forming units-fibroblast (CFU-F).

Claims 32-33. Cancelled.

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34. (Currently amended) An enriched cell population as in claim 25 wherein at least  
 40% of the cells are [mesenchymal precursor cells that are colony forming] capable of giving rise to colony forming units-fibroblast (CFU-F).

35 Claims 35-39. Cancelled.

40. (Currently amended) An enriched population of cells as in ~~either of claim 25 or claim 37~~ wherein a proportion of the cells are capable of differentiation into at least two committed cell types selected from the group including adipose, areolar, osseous,  
5 cartilaginous, elastic and fibrous connective tissue.

41. (Currently amended) An enriched population of cells as in ~~either of claim 25 or claim 37~~ wherein the enriched population is suitable for seeding onto a vehicle for implantation to assist in bone growth.

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42. (Currently amended) An enriched population of cells as in ~~either of claim 25 or claim 37~~ wherein the enriched population has an exogenous nucleic acid transformed in to it so that the population may be introduced into the body of a patient to treat a disease or condition.

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43. (Currently amended) An enriched population of cells as in ~~either of claim 25 or claim 37~~ wherein the enriched population has an exogenous nucleic acid that expresses a therapeutic agent transformed in to it so that the population may be introduced into the body of a patient to release the therapeutic agent.

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44. (Currently amended) An enriched population of cells as in ~~either of claim 25 or claim 37~~ wherein the enriched population is used to augment bone marrow transplantation.

25 45. (Original) A composition including the enriched population of claim 25.

46. Cancelled.

47. (Currently amended) A composition as in ~~either of claim 45 or 46~~ wherein the  
30 composition is preadsorbed onto ceramic vehicles that are precoated with fibronectin and are suitable for implantation to augment bone marrow transplantation.

48. (Currently amended) A composition as in ~~either of claim 45 or 46~~ wherein the composition is suitable for use in augmenting bone marrow transplantation.

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49. (Original) A composition as in claim 48 wherein the composition also includes

haemopoietic cells.

50. (Currently amended) A composition as in ~~either of claim 45 or 46~~ wherein the population has an exogenous nucleic acid transformed in to it so that the composition  
5 may be introduced into the body of a patient to treat a disease or condition.

51. (Currently amended) A composition as in ~~either of claim 45 or 46~~ wherein the population has an exogenous nucleic acid that expresses a therapeutic agent transformed in to it so that the composition may be introduced into the body of a patient  
10 to release the therapeutic agent.

52. (New) An enriched cell population as in claim 25 wherein the at least 1% of cells are mesenchymal precursor cells that are positive for one or more markers selected from the group consisting of STRO-1<sup>bright</sup>, VCAM-1<sup>bright</sup>, THY-1<sup>bright</sup>, CD146<sup>bright</sup> and STRO-2<sup>bright</sup>.  
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53. (New) An enriched cell population as in claim 52 wherein the STRO-1<sup>bright</sup> cells carry a high copy number of an antigen identified by STRO-1.

54. (New) An enriched cell population as in claim 52 wherein the VCAM-1<sup>bright</sup> cells carry  
20 a high copy number of an antigen identified by VCAM-1.

55. (New) An enriched cell population as in claim 52 wherein the THY-1<sup>bright</sup> cells carry a high copy number of an antigen identified by THY-1.

25 56. (New) An enriched cell population as in claim 52 wherein the CD146<sup>bright</sup> cells carry a high copy number of an antigen identified by CD146.

57. (New) An enriched cell population as in claim 52 wherein the STRO-2<sup>bright</sup> cells carry a high copy number of an antigen identified by STRO-2.  
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58. (New) An enriched cell population as in claim 25 wherein the STRO-1<sup>bright</sup> cells are negative for at least one marker selected from the group consisting of CBFA-1, collagen type II, PPAR $\gamma$ 2, and glycophorin A.